

CLAIMS

1. A disaster prediction system in which a disaster prediction apparatus collects abnormality detection signals relating to a natural disaster from a plurality of mobile communications apparatuses via a wireless communications network and provides information related to the natural disaster analyzed by the disaster prediction apparatus to the mobile communications apparatuses via the wireless communications network, the disaster prediction system comprising:

said mobile communications apparatuses, each mobile communications apparatus comprising:

a location detection section that locates a present position;

an abnormal signal detection section that receives an electromagnetic signal coming from a natural world, detects an abnormal signal and outputs an abnormality detection signal;

a first communications section that transmits the present position to a location management apparatus via the wireless communications network, transmits the abnormality detection signal to the disaster prediction apparatus via the wireless communications network, and receives the information related to the natural disaster from the disaster prediction apparatus via the wireless communications network; and

an alerting section that alerts the information related to the natural disaster received by the first communications section;

the location management apparatus receives present
5 positions from the plurality of mobile communications apparatuses via the wireless communications network and manages location information of each mobile communications apparatus; and

said disaster prediction apparatus, comprising:

10 a second communications section that receives abnormality detection signals from the plurality of mobile communications apparatuses via the wireless communications network, receives the location information of each mobile communications
15 apparatus from the location management apparatus via the wireless communications network, and transmits the information related to the natural disaster to the plurality of mobile communications apparatuses via the wireless communications
20 network;

a disaster prediction section that collects and analyzes the abnormality detection signals received from the plurality of mobile communications apparatuses per area based on the location
25 information and predicts occurrence of the natural disaster per area; and

an information generating section that

generates the information related to the natural disaster based on results of prediction by the disaster prediction section.

- 5 2. The disaster prediction system according to claim 1, wherein:

the disaster prediction section sets areas of prediction based on the location information of each mobile communications apparatus managed by the location
10 management apparatus, collects and analyses the abnormality detection signals received from the plurality of mobile communications apparatuses and predicts occurrence of the natural disaster per area of prediction; and

15 the information generating section generates alert information based on a result of prediction per area of prediction by the disaster prediction section.

3. The disaster prediction system according to claim
20 1, wherein the abnormal signal detection section comprises:

a storage section that stores a threshold against which an electromagnetic signal level is compared; and

a comparison section that compares the
25 electromagnetic signal level to the threshold stored in the storage section and outputs an abnormality detection signal when the electromagnetic signal level exceeds the

threshold.

4. The disaster prediction system according to claim
1, wherein the abnormal signal detection section
5 comprises:

a first storage section that stores a first threshold
against which an electromagnetic signal level is
compared;

a first comparison section that compares the
10 electromagnetic signal level to the first threshold
stored in the first storage section and outputs a first
comparison detection signal when the electromagnetic
signal level exceeds the first threshold;

a counting section that counts the number of times
15 the first comparison detection signal is output from the
first comparison section in a set period of time;

a second storage section that stores a second
threshold against which a count value in the counting
section is compared;

20 a second comparison section that compares the count
value to the second threshold stored in the second storage
section and outputs an abnormality detection signal when
the count value exceeds the second threshold; and

a calculation section that calculates and outputs
25 a maximum value and average value of the electromagnetic
signal level in the set period of time;

the second communications section transmits the

abnormality detection signal output from the second comparison section and the maximum value and average value of the electromagnetic signal level output from the calculation section to the disaster prediction apparatus
5 via the wireless communications network;

the second communications section receives abnormality detection signals and maximum values and average values of the electromagnetic signal level from the plurality of mobile communications apparatuses via
10 the wireless communications network; and

the disaster prediction section collects and analyzes the abnormality detection signals and the maximum values and average values of the electromagnetic signal level received from the plurality of mobile
15 communications apparatuses per area of prediction and predicts occurrence of the natural disaster per area.

5. The disaster prediction system according to claim 4, wherein the disaster prediction section determines
20 whether the frequency of receiving the abnormality detection signals from the plurality of mobile communications apparatuses and the maximum values and average values of the electromagnetic signal level are greater than or equal to respective reference values,
25 determines whether the number of reports of abnormality detection signals from each area of prediction is greater than or equal to a reference value, determines whether

the reports greater than or equal to the reference value have been received in a same time period, and predicts occurrence of the natural disaster per area of prediction based on results of these determinations.

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6. A disaster prediction system in which a disaster prediction apparatus collects abnormality detection signals relating to a natural disaster from a plurality of mobile communications apparatuses via a wireless communications base station and a communications network and provides information related to the natural disaster analyzed by the disaster prediction apparatus to the mobile communications apparatuses via the communications network and the wireless communications base station,

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15 said disaster prediction system comprising:

said mobile communications apparatuses, each mobile communication apparatus comprising:

an abnormal signal detection section that receives an electromagnetic signal coming from a natural world,

20 detects an abnormal signal and outputs an abnormality detection signal;

a first communications section that transmits the abnormality detection signal to the wireless communications base station and receives the information related to the natural disaster from the disaster prediction apparatus via the communications network and the wireless communications base station; and

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an alerting section that alerts the information related to the natural disaster received by the first communications section;

a wireless communications base station that manages
5 communications with a plurality of mobile communications
in a coverage area of the wireless communications base
station and communications with the disaster prediction
apparatus and a location management apparatus and
transmits location information managed by the wireless
10 communications base station to the location management
apparatus via the communications network;

the location management apparatus that receives the
location information from the wireless communications
base station via the communications network and manages
15 the location information; and

the disaster prediction apparatus, comprising:

a second communications section that receives
abnormality detection signals from the plurality
of mobile communications apparatuses via the
20 communications network and the wireless
communications base station, receives the location
information from the location management apparatus
via the communications network, and transmits
information related to the natural disaster to the
25 plurality of mobile communications apparatus via
the communications network and the wireless
communications base station;

a disaster prediction section that collects and analyzes abnormality detection signals received from the plurality of mobile communications apparatuses per area based on the location information and predicts occurrence of the natural disaster per area; and

an information generating section that generates the information related to the natural disaster based on results of prediction by the disaster prediction section.

7. The disaster prediction system according to claim 1, wherein:

the alerting section comprises a vibration control section and a vibration section; and

the vibration control section changes a strength or cycle of vibration of the vibration section in accordance with the received information related to the natural disaster.

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8. The disaster prediction system according to claim 1, wherein:

the alerting section comprises a flash cycle/light emission intensity adjusting section and a light emission section; and

the flash cycle/light emission intensity adjusting section changes the flash cycle or light emission

intensity of the light emission section in accordance with the received information related to the natural disaster.

- 5 9. The disaster prediction system according to claim 1, wherein:

the alerting section comprises a sound information storage section, a sound reproduction section, a volume adjusting section and a sound emission section; and

- 10 the sound reproduction section selects sound information stored in the sound information storage section in accordance with the received information related to the natural disaster, outputs a reproduced sound signal and a volume adjustment signal to the volume
15 adjusting section and adjusts the volume of the reproduced sound.

10. The disaster prediction system according to claim 1, wherein:

- 20 the alerting section comprises an image information storage section, an image reproduction section and a display section; and

- the image reproduction section selects image information stored in the image storage section in
25 accordance with the received information related to the natural disaster, outputs an image reproduction signal to the display section and displays a reproduced image.